

REMARKS

This Amendment is responsive to the Final Action dated December 30, 2002. The claim amendments included herein are merely clarifying amendments and are not meant to change the intended scope of the claims. Thus, the amendments present the rejected claims in better form for consideration on appeal, and they should be entered in due course. Moreover, the amendments are manifest, requiring only a cursory review by the Examiner, thereby providing additional ground for their entry.

Claims 1-7 were pending in the application. In the Final Action claims 1-7 were rejected. In this Amendment, claim 1 has been amended. Claims 1-7 thus remain for consideration.

Applicant submits that claims 1-7 are in condition for allowance and requests reconsideration and withdrawal of the rejections in light of the following remarks.

§103 Rejections

Claim 1-7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sato (U.S. Patent No. 5,239,367).

Applicant submits that claim 1 is patentable over Sato.

Applicant's invention as recited in claim 1 is directed toward a filter apparatus that includes a main filter and a subordinate filter. The claim recites a signal generator for generating a signal and supplying the signal to the subordinate filter, a phase difference detector for detecting a phase difference between the signal generated by the signal generator and a signal

output from the subordinate filter, and a reference signal generator for generating a reference signal corresponding to an ideal value of the phase difference detected by the phase difference detector. The claim further recites that "said reference signal is set to a value based on an amount of phase shift that is caused when a signal having a frequency equal to the cut-off frequency of said subordinate filter is supplied to said subordinate filter."

Sato does not disclose setting a reference signal value based on an amount of phase shift that is caused when a signal having a frequency equal to the cut-off frequency of a subordinate filter is supplied to the subordinate filter. Accordingly, Applicant believes claim 1 is patentable over Sato on at least this basis.

Claims 2-7 depend on claim 1. Since claim 1 is believed to be patentable over Sato, claims 2-7 are believed to be patentable over Sato on the basis of their dependency on claim 1.

Applicant respectfully submits that all of the claims now pending in the application are in condition for allowance, which action is earnestly solicited.

It is submitted that these claims, as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes to these claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather,

these changes are made simply for clarification and to round out the scope of protection to which Applicant is entitled.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicant's undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

If any issues remain, or if the Examiner has any further suggestions, he/she is invited to call the undersigned at the telephone number provided below.

The Examiner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account No. 50-0320.

The Examiner's consideration of this matter is gratefully acknowledged.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 1 has been amended as follows:

--1(twice amended). A filter apparatus comprising:

a main filter which has an input terminal and an output terminal and whose characteristics is set by an external control signal;

a subordinate filter having substantially the same construction as that of said main filter;

a signal generator for generating a signal of a frequency equal to a cut-off frequency of each of said main filter and said subordinate filter and supplying it to said subordinate filter;

a phase difference detector for detecting a phase difference between the signal generated from said signal generator and an output signal of said subordinate filter and outputting a phase difference signal;

a reference signal generator for generating a reference signal corresponding to an ideal value of the phase difference detected by said phase difference detector; and

an error detector for detecting an error between said phase difference signal and said reference signal and supplying an error signal as said external control signal to said main filter and said subordinate filter;

[whereby a cut off frequency of at least one of said main filter and said subordinate filter is controlled through the value of at least one resistor in said filter and the value of said resistor is set according to an external voltage]

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whereby said reference signal is set to a value based on an amount of phase shift
that is caused when a signal having a frequency equal to the cut-off frequency of said
subordinate filter is supplied to said subordinate filter.--